

### Claims

1. In an agricultural combine comprising a supporting structure having ground engaging means for supporting and propelling the supporting structure, a separating unit being located within the supporting structure, the separating unit having a top, a fan located on the supporting structure and which forms an air stream, and ductwork for directing the air stream to the top of the axial separator unit for blowing debris therefrom, the ductwork comprising a clear conduit having a conduit length, an inlet which receives generally horizontally traveling air from the fan, and an outlet which directs the air generally vertically downward, an improvement comprising:

at least one airfoil transversely extending across the conduit, the airfoil comprising a leading edge, a trailing edge located downstream from the leading edge, a thickness, and a chord extending from the leading edge to the trailing edge, the chord having a chord length substantially less than the length of the conduit, the airfoil being adapted to encourage airflow downward toward the outlet and to discourage air from swirling back toward the inlet.

2. The improvement described in claim 1 wherein the leading edge of the airfoil is located proximate to inlet.

3. The improvement described in claim 2 wherein the thickness of the airfoil is substantially constant.

4. The improvement described in claim 3 wherein the airfoil comprises a conduit openly extending transversely through the ductwork.

5. In an agricultural combine comprising a supporting structure having ground engaging means for supporting and propelling the supporting structure, a separating unit being located within the supporting structure, the separating unit having a top, a fan located on the supporting structure and which forms an air stream, and ductwork for directing the air stream to a top of the axial separator unit for blowing debris therefrom, the ductwork comprising a clear conduit having a conduit length, an inlet which receives generally horizontally traveling air from the fan, and an outlet which directs the air generally vertically downward, the duct having a neck portion proximate to and above the outlet, the neck portion having a smaller cross sectional area than the inlet and the outlet, an improvement comprising:

at least one airfoil transversely extending across the conduit, the airfoil comprising a leading edge, a trailing edge located downstream from the leading edge, a thickness, and a chord extending from the leading edge to the trailing edge, the chord having a chord length, the airfoil being adapted to encourage airflow downward toward the outlet and to discourage air from swirling back toward the inlet.

6. The improvement described in claim 5 wherein a substantial portion of the airfoil is located upstream from the neck portion.

7. The improvement described in claim 6 wherein the leading edge of the airfoil is located proximate to inlet.

8. The improvement described in claim 7 wherein the thickness of the airfoil is substantially constant.

9. The improvement described in claim 8 wherein the airfoil comprises a conduit openly extending transversely through the ductwork.